Background
Elective pregnancy termination (EPT) is one of the most common procedures women undergo in the US. It is estimated that 43% of women have had an EPT by age 45. Access to EPT has become more difficult over the past decade. Since 2013, over 275 facilities providing EPT have closed. Leaving 11.3 million women of reproductive age without close access to care (Figure 1).

Efforts to increase access to EPT are multifactorial. Social movements have advocated to repeal prohibitory laws state and nationwide. Local governments, hospitals, and clinics have begun allowing mid-level practitioners such as Nurse Practitioners and Physician Assistants to provide EPT.

Finally, medical school take on the responsibility of training our future physicians the basics of EPT. This training is crucial, as physicians are a key component in advocating EPT as a vital component of women’s health care.

Research Question
In 1997, the Association of Professors of Gynecology and Obstetrics (APGO) introduced medical student objectives about EPT in their core women’s health curriculum (Figure 2). Despite their introduction over 20 years ago, studies over the past two decades have shown medical school curriculums around the country are not incorporating EPT into their curriculums (Figure 3).

As a response to this unmet need for EPT education, students at NSU-KPCOM designed an educational intervention designed to teach students the objectives put forth by APGO.

The primary objective of this study was to evaluate whether our educational intervention increased knowledge of APGO’s EPT objectives as compared to a control group which received no intervention. We hypothesized that students participating in the educational intervention would show increased scores on content questions in surveys compared to both pre-intervention surveys as well as the control group’s surveys.

Figure 1: Areas within 1 hour drive of the nearest abortion facility in 2018. Source: Advancing New Standards in Reproductive Health, UCSF

Figure 2: Association of Professors of Gynecology and Obstetrics Educational Topic 34: Pregnancy Termination 2014 objectives

Table 1: Components of abortion education in the preclinical years and the third-year OB-GYN clerkship

<table>
<thead>
<tr>
<th>Education components</th>
<th>Preclinical years</th>
<th>Third-year OB-GYN clerkship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture on abortion</td>
<td>15 (19%)</td>
<td>25 (32%)</td>
</tr>
<tr>
<td>Lecture, abortion</td>
<td>17 (22%)</td>
<td>29 (37%)</td>
</tr>
<tr>
<td>mentioned</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small group</td>
<td>4 (5%)</td>
<td>9 (12%)</td>
</tr>
<tr>
<td>Clinical experience</td>
<td>5 (6%)</td>
<td>35 (45%)</td>
</tr>
<tr>
<td>No formal education</td>
<td>34 (44%)</td>
<td>18 (23%)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>18 (23%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

* Numbers in columns do not sum to 100% because some programs included more than one education component.

Figure 3: Results from Abortion Education in Medical Schools, a National Survey 2005
Evaluating Students’ Knowledge of Elective Pregnancy Termination Before and After Educational Intervention

Elizabeth Weirich, OMS 4; James O’Neil, OMS 4; Renee Tornea, OMS 4; Alexandra Lenox, OMS 4; Gina Foster, MD
Nova Southeastern University Kiran C. Patel College of Osteopathic Medicine

Study Participants
- Randomized, controlled study
- Institutional Review Board approved

Inclusion Criteria
- First and second year osteopathic medical students
- Reliable email
- Willing to complete a minimum of two surveys

Exclusion Criteria
- Allopathic medical students
- Third- and fourth-year medical students.
- Demonstrated noncompliance with completing a pre-intervention survey.

Educational Intervention
- Two common patient encounters:
  - Positive pregnancy test
  - Questions about termination
- 20-minute power-point presentation reviewing APGO’s objectives (Figure 4.)
- Practice interviewing skills with student actors (Figure 5)
- Debriefing and clarifying questions

Surveys
- Uniform in their questioning
  - Six multiple-choice on APGO’s EPT objectives
  - One Likert-scale question

Study Goals
- Student knowledge of APGO’s EPT objectives prior to the study
- Student knowledge of APGO’s EPT objectives after the study
- Retainment of knowledge of APGO’s EPT objectives four weeks after the study
- Survey bias

Study Procedures
See Figure 6

Analysis
Primary study outcome
- Number of content questions correct
Secondary study outcomes
- Comfort with providing non-directive counseling surrounding pregnancy including unintended pregnancy”
Analyzed using 2 sample T tests performed on Microsoft Excel

Power of results
- Measured using Online Power Sample Size Calculator
Evaluating Students’ Knowledge of Elective Pregnancy Termination Before and After Educational Intervention

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**Results**

Figure 7 and Figure 8 show the intervention and control groups’ fraction of content questions correct in all three surveys given. While there were no significant differences between the control group responses, significant differences between the intervention groups post surveys and pre survey did exist (P = 0.0005 and 0.0004 respectively.)

Figures 9-11 compare fraction on content questions correct between control and intervention group prior to, (figure 9) immediately after, (figure 10) and four weeks after intervention (figure 11). While the pre-intervention results showed no significance (p=0.33), both the immediate post intervention and four weeks post intervention data showed significant differences between control and intervention groups (p=.002 ad .003 respectively)

**Discussion**

Table 1: Likert-scale Averages for Control and Intervention Groups

<table>
<thead>
<tr>
<th></th>
<th>Averages</th>
<th>Pre-event</th>
<th>Post-event</th>
<th>Delayed post-event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>7.3</td>
<td>8.6</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>5.0</td>
<td>5.2</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>P-Value</td>
<td>0.15</td>
<td>0.02</td>
<td>0.04</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows both control and intervention groups’ average response value from the Likert-scale question in all three surveys. No significant difference was found in the responses prior to the intervention, significant differences were found in the two post event survey responses. (P=.002 and .004 respectively)
Evaluating Students’ Knowledge of Elective Pregnancy Termination Before and After Educational Intervention

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Content Questions
Each group’s individua data
- Significant improvement between the intervention group’s pre and both post surveys
- Control group’s data showed no significant change
Comparing intervention to control group,
- Pre-survey data showed no significance
  - Both test groups began with the same understanding of APGO’s EPT objectives
- Post-event data showed significance in both post event surveys surveys
  - The intervention group’s knowledge of APGO’s EPT objectives increased significantly after the educational event and was retained four weeks after the event.

Likert Scale Question
Comparing intervention to control group
- Significant change is seen in between the pre and two post event surveys.
- Test group had on average a higher average on the Likert scale question than the control group.
Each group’s individual data
- No significant change between pre and either post-event surveys in either group.
  - The intervention group may have initially felt more comfortable providing counseling on elective termination

Power
Despite the significant results found between the two groups, the study performed was significantly underpowered. Power of the results ranged from 20 to 50 percent.

Further Steps
While significant results were found between intervention and control groups, the power of the study remains low. The study run served as a pilot which now, with promising initial results, can be carried out with larger sample sizes, increasing the study’s power.
Currently, NSUCOM’s MSFC Chapter is repeating this study with larger sample sizes. (Figure 12) Providing results remain statistically significant in a higher powered study, students will open the learning intervention to other professional schools at Nova Southeastern University such.
As elective pregnancy termination is one of the most common procedures in the United states, it is important for all physicians, as well as mid level practitioners and medical staff, be knowledgeable on fundamental objectives presented by APGO. As research continues on this educational intervention, it is our hope that this tool can be used to educate medical providers on its fundamentals, thereby providing better care to women.

Sources

Figure 12: Intervention group and student educators involved in creating this project